

Diagram illustrating the insertion of a new node into a linked list.

Diagram 1: Inserting a new node at the beginning of a list.

The diagram shows a linked list with four nodes. Each node is represented as a box containing two values: data and next. Node 1 has data 1 and next 2. Node 2 has data 2 and next 3. Node 3 has data 3 and next 4. Node 4 has data 4 and next null. A new node 5 with data 5 and next null is being inserted at the head. The pointer head is pointing to node 1. A blue bracket labeled "node" groups node 1 and node 2. A red bracket labeled "arr[0]" encloses node 5. A red circle labeled "2) address of next info" points to the "next" field of node 1.

Diagram 2: Inserting a new node between existing nodes.

The diagram shows a linked list with five nodes: 1, 2, 3, 4, and 5. Node 1 is the head. Node 2 has data 2 and next 3. Node 3 has data 3 and next 4. Node 4 has data 4 and next 5. Node 5 has data 5 and next X. A new node 7 with data 7 and next null is being inserted between node 2 and node 3. A green bracket labeled "add slow 2 and 3" groups nodes 2 and 3. A green circle labeled "7" encloses node 7. A green circle labeled "1" encloses node 1. A green circle labeled "4" encloses node 4. A blue circle labeled "Insert in between" is placed above the list.

Diagram 3: Class Node definition.

```
class Node {
    int data;
    Node next;
}
```

A class definition for Node is shown. It contains two members: data of type int and next of type Node.

Diagram 4: Insert at first.

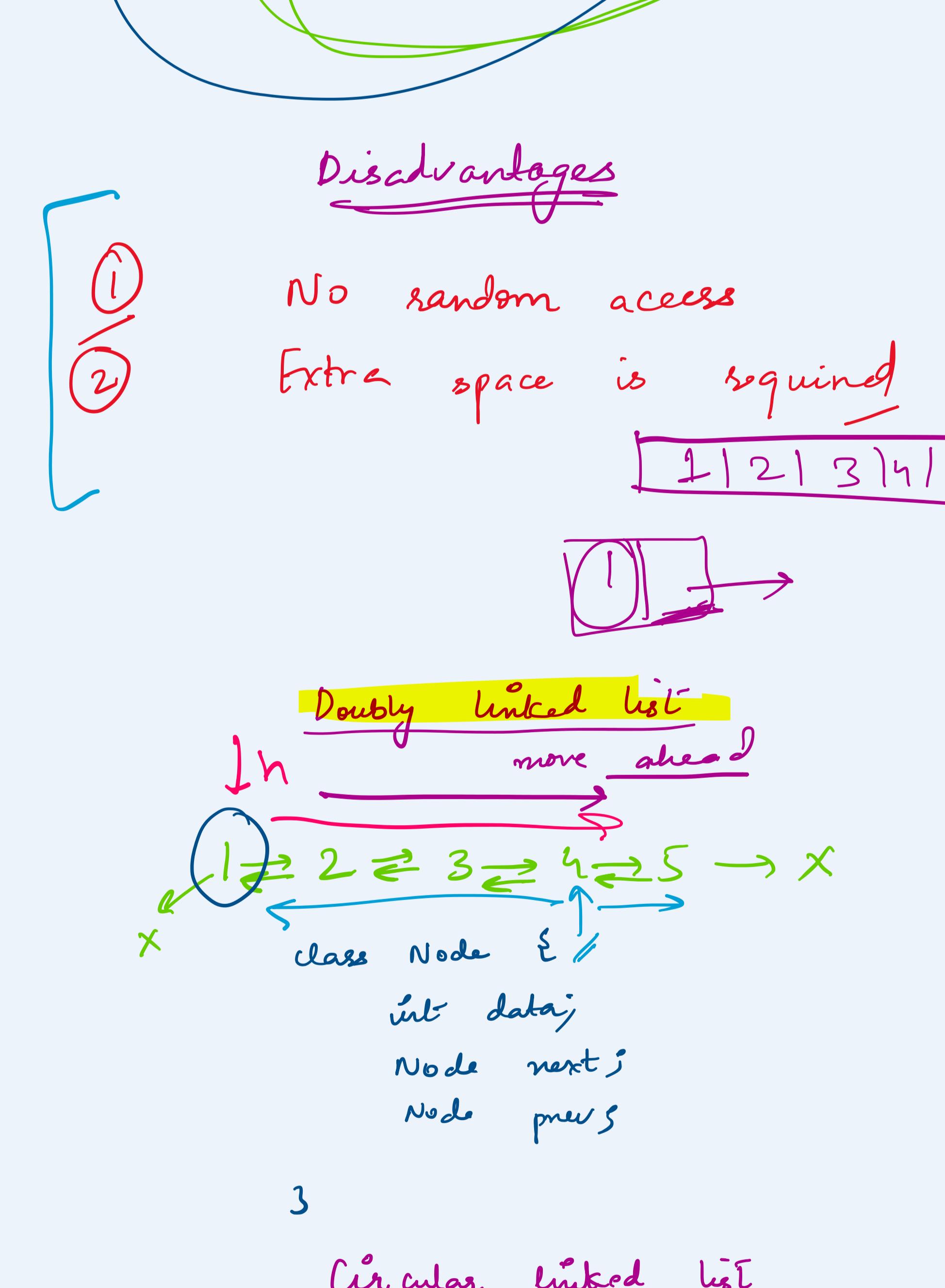
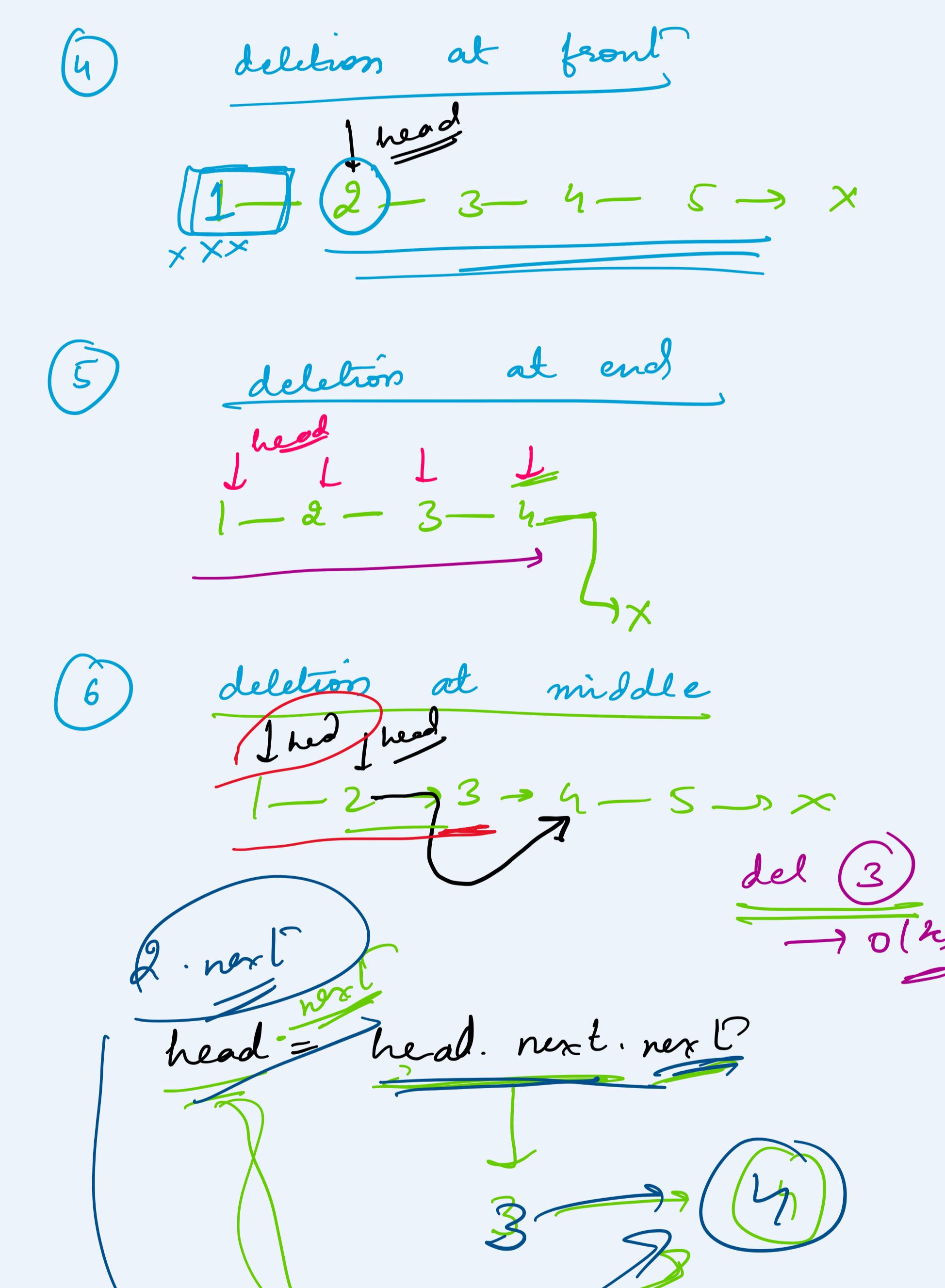
The diagram shows a linked list with five nodes: 1, 2, 3, 4, and 5. Node 1 is the head. A new node 6 with data 6 and next null is being inserted at the head. The pointer head is pointing to node 6. A red circle labeled "6" encloses node 6. A red circle labeled "1" encloses node 1. A blue circle labeled "0(1)" is placed to the right of the list.

Diagram 5: Insert at end.

The diagram shows a linked list with five nodes: 1, 2, 3, 4, and 5. Node 1 is the head. A new node 6 with data 6 and next null is being inserted at the end of the list. The pointer head is pointing to node 1. A red circle labeled "6" encloses node 6. A blue circle labeled "0(1)" is placed to the right of the list.

Diagram 6: Insert at between.

The diagram shows a linked list with five nodes: 1, 2, 3, 4, and 5. Node 1 is the head. A new node 6 with data 6 and next null is being inserted between node 3 and node 4. The pointer head is pointing to node 1. A red circle labeled "6" encloses node 6. A blue circle labeled "0(r)" is placed to the right of the list.



→ a circular linked list is a variation of a linked list in which last node points to the first node, completing a full circle of nodes.

```
graph LR; 1 --> 2 --> 3 --> 4 --> 5 --> 1
```

